

Attorney Docket No.: 2003P12572US

Application No.: 10/642,829

Page 5 of 14

IN THE CLAIMS:

Claim 1 (Canceled).

2. (Currently amended) A fuel injector comprising:

a housing having a passageway extending between an inlet and an outlet along a longitudinal axis, the housing including a body proximate the outlet;

an armature assembly disposed in the body, the armature assembly having a closure member; and

a seat assembly disposed in the body, the seat assembly including:

a unitary seat including:

a flow portion, the flow portion extending along the longitudinal axis between a first surface and an orifice disk retention surface at a first length, the flow portion having a seat orifice extending therethrough; and

a securement portion, the securement portion extending along the longitudinal axis away from the orifice disk retention surface at a second length greater than the first length; and

an orifice disk coupled to the orifice disk retention surface so that the orifice disk is aligned in a fixed spatial axial orientation with respect to the flow portion; and

~~The fuel injector of claim 1, further comprising~~ at least one weld extending from an outer surface of the body to the surface of the securement portion at a location distal to the flow portion so that the seat and the orifice disk generally maintains its fixed spatial axial orientation with the flow portion.

3. (Currently Amended) A fuel injector comprising:

a housing having a passageway extending between an inlet and an outlet along a longitudinal axis, the housing including a body proximate the outlet;

an armature assembly disposed in the body, the armature assembly having a closure member; and

Attorney Docket No.: 2003P12572US

Application No.: 10/042,620

Page 6 of 14

a seat assembly disposed in the body, the seat assembly including:

a unitary seat including:

a flow portion, the flow portion extending along the longitudinal axis between a first surface and an orifice disk retention surface at a first length, the flow portion having a seat orifice extending therethrough; and

a securement portion, the securement portion extending along the longitudinal axis away from the orifice disk retention surface at a second length greater than the first length;

and

an orifice disk coupled to the orifice disk retention surface so that the orifice disk is aligned in a fixed spatial axial orientation with respect to the flow portion; and

~~The fuel injector of claim 1, further comprising~~ at least one weld extending from an outer surface of the body to the surface of the securement portion at a location distal to the flow portion so as to form a generally hermetic seal between the body and the seat.

4. (Currently amended) A fuel injector comprising:

a housing having a passageway extending between an inlet and an outlet along a longitudinal axis, the housing including a body proximate the outlet;

an armature assembly disposed in the body, the armature assembly having a closure member; and

a seat assembly disposed in the body, the seat assembly including

a unitary seat including:

a flow portion, the flow portion extending along the longitudinal axis between a first surface and an orifice disk retention surface at a first length, the flow portion having a seat orifice extending therethrough; and

a securement portion, the securement portion extending along the longitudinal axis away from the orifice disk retention surface at a second length greater than the first length; and

Attorney Docket No.: 2003P12572US

Application No.: 10/642,829

Page 7 of 14

an orifice disk coupled to the orifice disk retention surface so that the orifice disk is aligned in a fixed spatial axial orientation with respect to the flow portion; and

~~The fuel injector of claim 1, further comprising~~ at least one weld extending from an outer surface of the body to the surface of the securement portion at a location distal to the flow portion so that the seat maintains a dimensional symmetry about the longitudinal axis.

5. (Currently amended) The fuel injector of claim ~~[[1]]~~ 2, wherein the at least one weld is located on the outer surface of the body at a length of approximately 50% of the second length along the longitudinal axis.

6. (Currently amended) The fuel injector of claim 5, wherein the housing comprises:
an inlet tube having a first end and a second end ~~being coupled to a body~~, the second end of the inlet tube having an end portion confronting an end portion of the armature assembly;
a filter being disposed proximate the first end of the inlet tube;
a resilient member having one portion disposed proximate the second end of the inlet tube and another portion disposed within a pocket in the armature assembly; and
an adjusting tube being located within the inlet tube, the adjusting tube engaging the one portion of the resilient member so as to bias the closure member towards a position occluding flow through the seat orifice.

7. (Original) The fuel injector of claim 6, wherein the armature assembly comprises an armature coupled to a needle.

8. (Original) The fuel injector of claim 7, wherein the needle comprises an end being generally hemispheric about the longitudinal axis.

9. (Original) The fuel injector of claim 8, further comprising a pole piece, and wherein the inlet tube and the pole piece comprises a one-piece member.

10. (Currently amended) The fuel injector of claim 9, wherein the flow portion comprises:
~~first and second spaced apart generally planar surfaces disposed about the longitudinal axis, the first and second spaced apart generally planar surfaces; and~~

Attorney Docket No.: 2003P12572US

Application No.: 10/642,629

Page 8 of 14

a sealing surface co-terminus with ~~one of the first and second spaced apart generally planar surfaces~~ the first surface and contiguous to the seat orifice.

11. (Currently amended) The fuel injector of claim 10, wherein the ~~securement portion~~ seat comprises:

a perimeter cincturing the flow portion and the securement portion, the perimeter extending along the longitudinal axis between a first perimeter end and a second perimeter end over a third length greater than the second length.

12. (Currently amended) The fuel injector of claim 11, wherein the seat assembly further comprises a guide member contiguous to the first perimeter end of the seat, the guide member being provided with a central through opening along the longitudinal axis and a plurality of through openings disposed about the central opening, the central through opening guiding the closure member along the longitudinal axis between the first position where the closure member occludes fuel flow through the seat orifice and the second position where the closure member is spaced from the seat orifice so as to permit fuel flow through the seat orifice.

13. (Currently amended) The fuel injector of claim 12, wherein ~~the seat further comprises an orifice disk connected to the second surface of the seat, the orifice disk having~~ has a plurality of through openings being disposed about the longitudinal axis and is in fluid communication with the seat orifice.

14. (Original) The fuel injector of claim 13, wherein the armature comprises at least one opening generally oblique to the longitudinal axis and extending through the surface of the armature.

15. (Original) The fuel injector of claim 14, wherein the armature comprises an inner surface telescoping over an outer surface of the closure member.

Claims 16 to 21 (Canceled).

Attorney Docket No.: 2003P12572US

Application No.: 10/642,629

Page 9 of 14

Please add new claims 22-23 as follows:

22. (New) The fuel injector of claim 3, wherein the at least one weld is located on the outer surface of the body at a length of approximately 50% of the second length along the longitudinal axis.

23. (New) The fuel injector of claim 4, wherein the at least one weld is located on the outer surface of the body at a length of approximately 50% of the second length along the longitudinal axis.